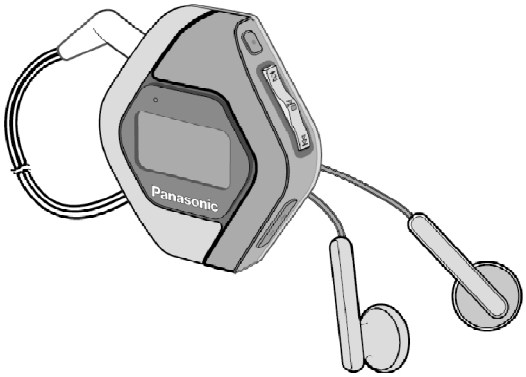
TD0503015C2

# Digital Audio Player

# SV-MP120VE

## Colour

## (K).....Black Type




## SPECIFICATIONS

**Specifications**



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| | |
|---|---|
| **Memory size:** | **512 MB** |
| **Supported sampling frequency: /** | **MP3; 32 kHz, 44.1 kHz, 48 kHz, WMA; 8 kHz to 44.1 kHz** |
| **Supported bit-rates:** | **MP3 8 kbps to 320 kbps (128 kbps is recommend) WMA 32 kbps to 192 kbps (96 kbps is recommend)** |
| **No. of channels:** | **Stereo, 2 channels (MUSIC, FM RADIO) Mono, 1 channel (IC RECORDER)** |
| **Frequency response:** | **20Hz to 20,000Hz (+0dB, -6dB) (MUSIC), 300 Hz to 4,300 Hz (IC RECORDER,HQ mode)** |
| **Mic S/N:** | **30 dB (IC RECORDER,HQ mode)** |
| **Radio Frequency range (FM):** | **87.9 MHz to 107.9MHz (200kHz steps),87.5 MHz to 108.0 MHz (50/100 kHz steps),** |
| **Output:** | **4.5 mW + 4.5 mW (16 Ω ,M3 jack)** |
| **Power supply:** | **DC 1.5V (one alkaline LR03,AAA battery)** |
| **Approximate play times:** | **13 hours (MUSIC), 7 hours (FM RADIO)** |
| **Approximate recording times:** | **13 hours (IC RECORDER, HQ mode) 7 hours (FM RADIO)** |
| **Maximum dimensions (WxHxD):** | **53.2 x 61.1 x 17.5mm** |
| **Mass:** | **41.7g with battery / 30.4g without battery** |

**-Specifications are subject to change without notice.**
**-The play times shown depend on operating conditions.**
**-Mass and dimensions are approximate.**
**-MB means one million bytes. Useable capacity may be less.**
**-This product is compatible with the following character code. The display may not appear correctly with other character codes.**

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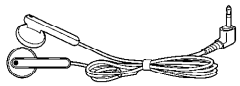
Panasonic

# 1. Accessories

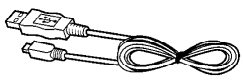
## - Stereo earphones

**(L0BAB0000193) ..... 1pc.**



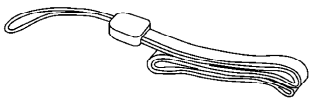
## - USB Cable

**(K1HA05AD0004)..... ..... 1pc.**



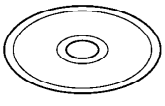
## - Neck Strap

**(VFC4028) .....1pc.**



## - CD-ROM Driver

**(RFET0002) ..... 1pc.**



# 2. Location of Controls

# 3. Operation Checks and Component Replacement /



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# Procedures

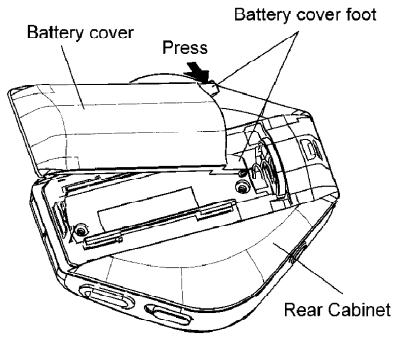
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components. /
2. For reassembly after operation checks or replacement, reverse the respective procedures special ressembly procedures are described only when required.
3. Select item from the following index when checks or replacement are required.

**Contents**


1. Checking for the main P.C.B.
2. Checking for the memory P.C.B.
3. Checking for the LCD ass'y.
4. Checking for the prevent electrostatic discharge.


## 3.1. Removal of the battery cover

1. Open the battery cover.
2 .Press the battery cover foot and then remove the battery cover.




## 3.2. Removal of the front cabinet



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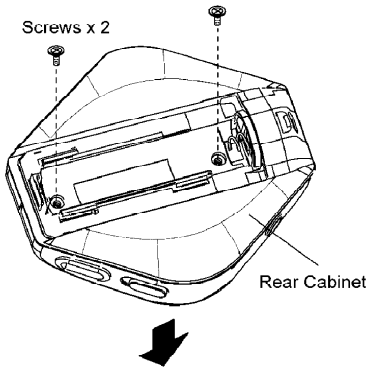
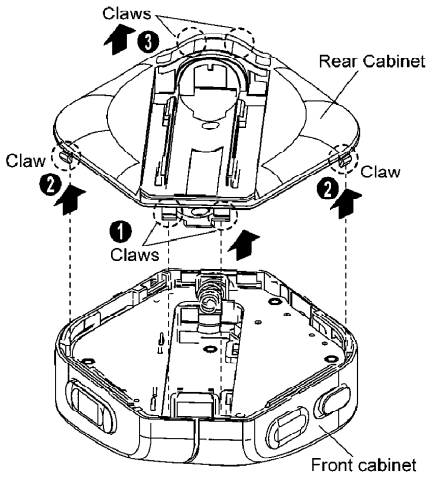
1.Remove the screws x 2.




2.Release the claws x 6.
3.Remove the rear cabinet in the direction of arrow.
Note:When release of the claws,Please follow the step ❶ ⟶ ❷ ⟶ ❸. in sequence.




## 3.3. Removal of the SUB P.C.B.



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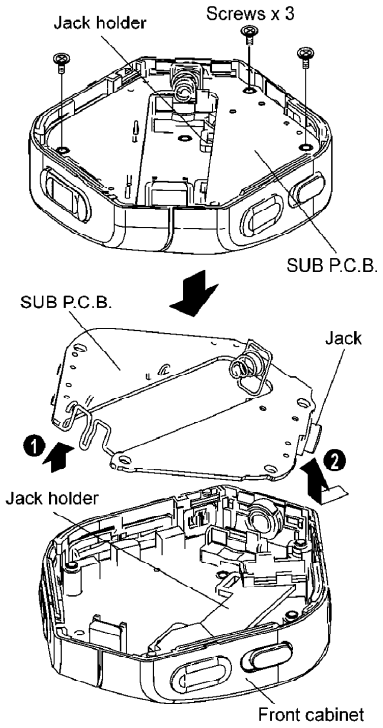
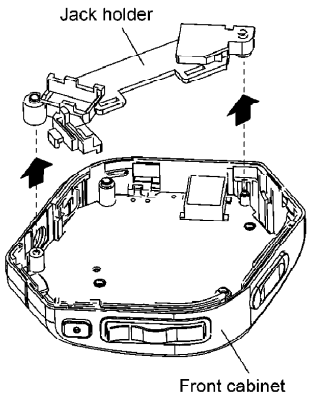
1.Remove the screws x 3.
2.Press and hold the jack holder and remove the SUB P.C.B. in the direction of arrow ❶ and ❷ .
Note: To separate the jack from jack holder smoothly.




## 3.4. Removal of the jack holder

1.Remove the jack holder in the direction of arrow.




## 3.5. Removal of the Main P.C.B.



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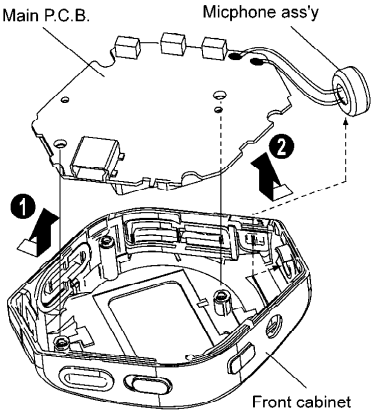
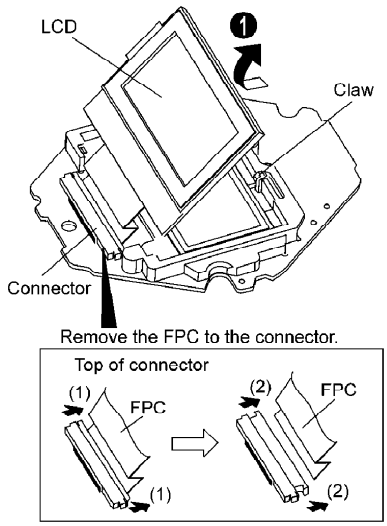
1.Remove the micphone ass'y.
2.Remove the Main P.C.B. in the direction of arrow ❶ and ❷.



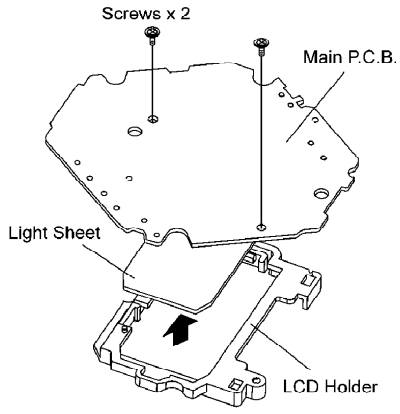

## 3.6. Removal of the LCD Ass'y

1.Remove the claw.
2.Remove the LCD in the direction of arrow ❶.




## 3.7. Removal of the LCD holder

1.Remove the screws x 2.
2.Remove the LCD holder and light sheet.



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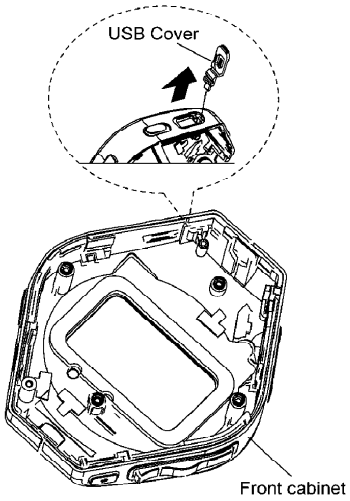
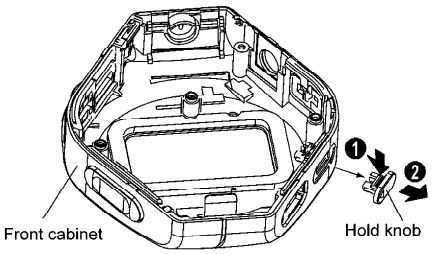
## 3.8. Removal of the USB cover

1. Open the USB cover.
2. Remove the USB cover in the direction of arrow.



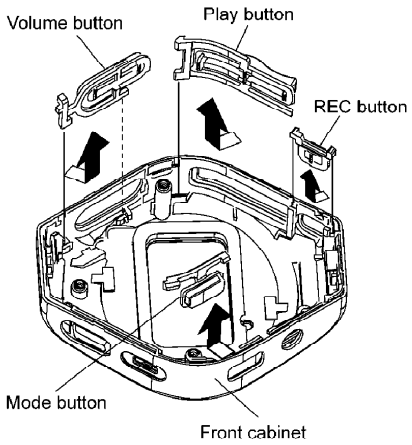

## 3.9. Removal of the holder knob

1.Remove the hold knob in the direction of arrow ❶ and ❷.




## 3.10. Removal of the REC button and play button and volume button and mode button

1.Remove the volume button and play button and REC button and mode button in the direction of arrow.



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# 4. Instructions for Repair Service

How to Set the unit after Repair
Please adjust the unit settings with the following directions after the below part is replaced:

| | Exchange Parts | Content |
|---|---|---|
| A | DSP IC | ① Install the software by using DFU.<br>② Copy the Font table into the root directory. |
| B | Flush-ROM | Copy the Font table and software into the root directory. |

Please follow below instruction when you need to replace PWB included DSP IC or Flush-ROM.

< Procedure >

1. Preparation

Download the necessary software (DFU, Firmware, Font table) from TSN-WEB
(Support Information From NWBG-PAVC).

(NOTE) If you may not be able to complete a downloading from the above TSN-WEB page,
Please obtain the data through your local Panasonic Service Organization.

A (DSP IC):

2. Enter the Service Mode (Refer to the Inspection Procedure of DSP-IC).
3. Install the Firmware Soft by using DFU.
4. Copy the Font Table (into the route directory in the unit).
5. Unplug the USB cable and Jumper pin after installing.
6. Follow the check procedure to confirm DSP-IC and Font Table is set.

B (Flash-ROM):

2. Copy the Firmware Soft and Font Table into the root directory in the unit.
3. Unplug the USB cable.
4. Follow the check procedure to confirm DSP-IC and Font Table is set.

# 5. Service Position



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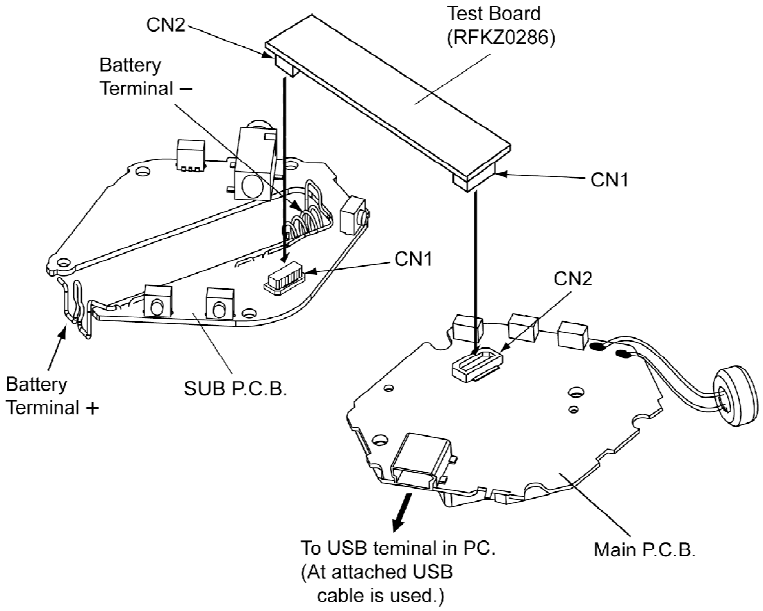
■ Test Board (RFKZ0286)

CN1
To B MAIN P.C.B.(CN2)

CN2
To A SUB P.C.B.(CN1)

● Connect CN1 of the Test Board to MAIN P.C.B. CN2 of the MAIN P.C.B. and connect CN2 of the Test Board to CN1 of the USB P.C.B.




# 6. Service Mode

## 6.1. Checking Procedures for IC3 C2HBZG000008



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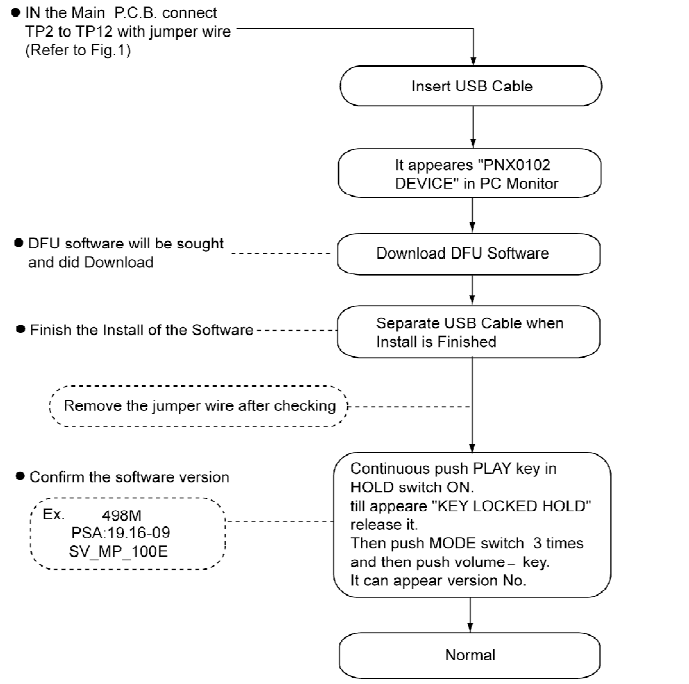
This is to determine whether the cause of the problem is in the DSP-IC or in one of the accessories.


● IN the Main P.C.B. connect TP2 to TP12 with jumper wire (Refer to Fig.1)
Insert USB Cable
It appeares "PNX0102 DEVICE" in PC Monitor
● DFU software will be sought and did Download
Download DFU Software
● Finish the Install of the Software
Separate USB Cable when Install is Finished
Remove the jumper wire after checking
● Confirm the software version
Ex. 498M PSA:19.16-09 SV_MP_100E
Continuous push PLAY key in HOLD switch ON. till appeare "KEY LOCKED HOLD" release it. Then push MODE switch 3 times and then push volume – key. It can appear version No.
Normal

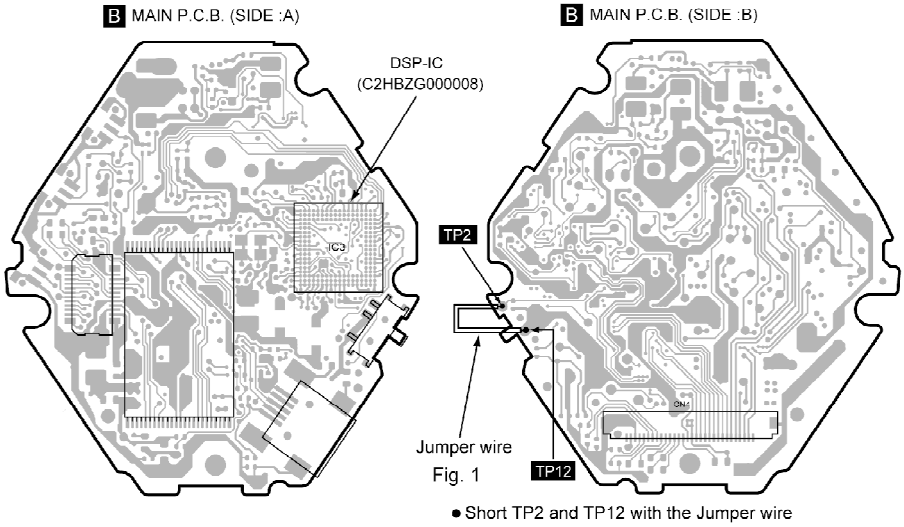



Fig. 1

● Short TP2 and TP12 with the Jumper wire

## 6.2. Checking Procedures for Font table



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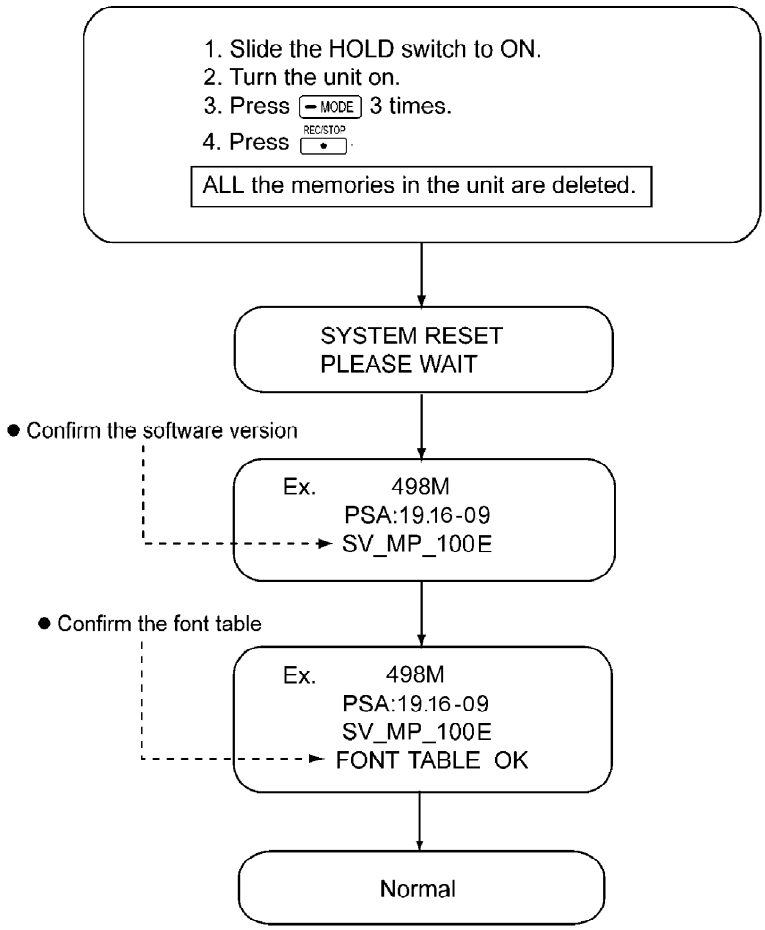
■ Checking the Font table step




# 7. Service Precautions

## 7.1. Install and Copy the software (DFU,firmware,font table) After replacing the main PCB and DSP IC (main CPU),reinstall DFU and firmware,and copy font table again.

## 7.2. Please contact to the service organization of the belonging for the acquisition of data and obtain the software.



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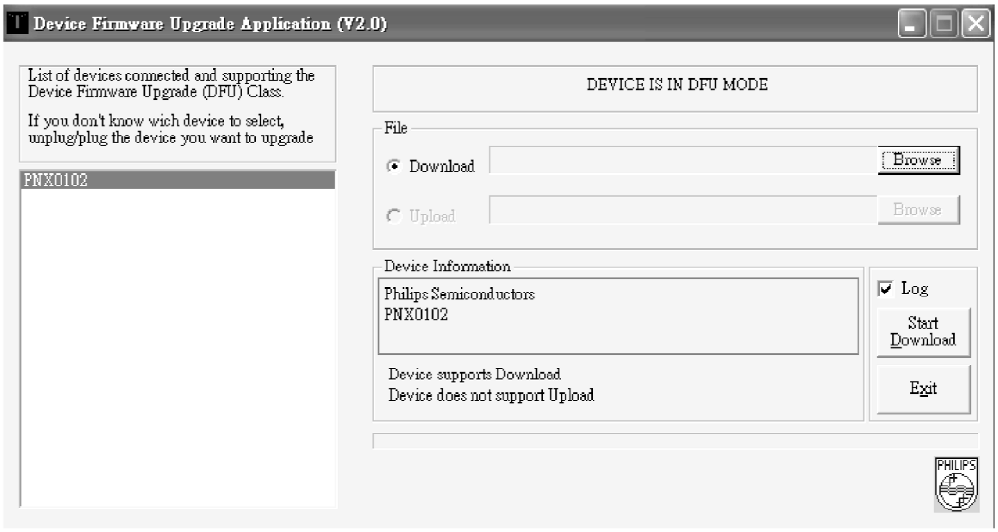
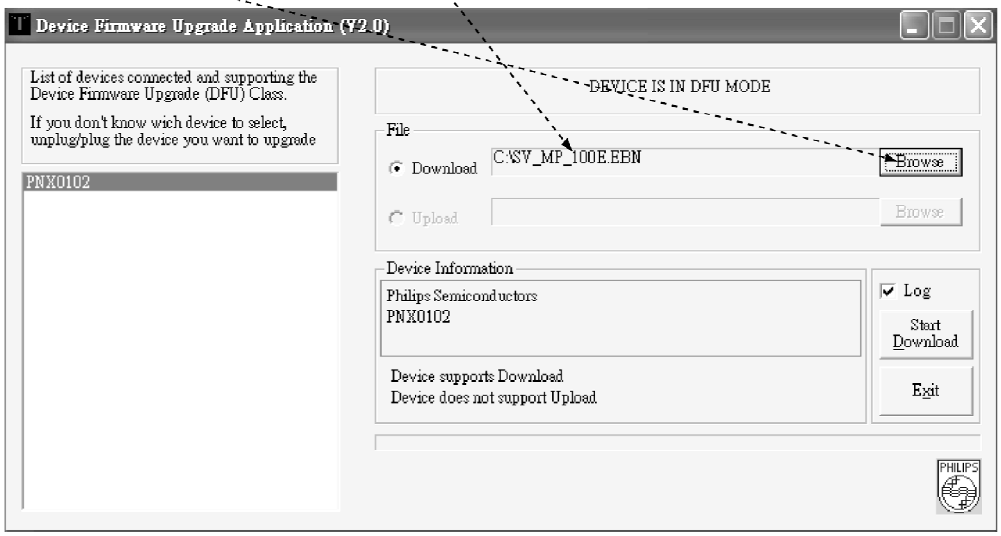
Notes:
Step 1:
Start DFU Application (Device Firmware Upgrade Application) Double click "DFUAPP.exe" File and display as below.
Step 2:
Connect Main P.C.B. to computer with USB cable.

PC Monitor Display




Step 3:
Start DFU Application So that the image as below will appear in PC monitor.
If the image (PNX0102) does not appear, DSP IC can be considered to be deffective.
Step 4:
Click "**Browser**" button and then select the "**unit firmware soft**" (SV_MP_100E.EBN,file)

PC Monitor



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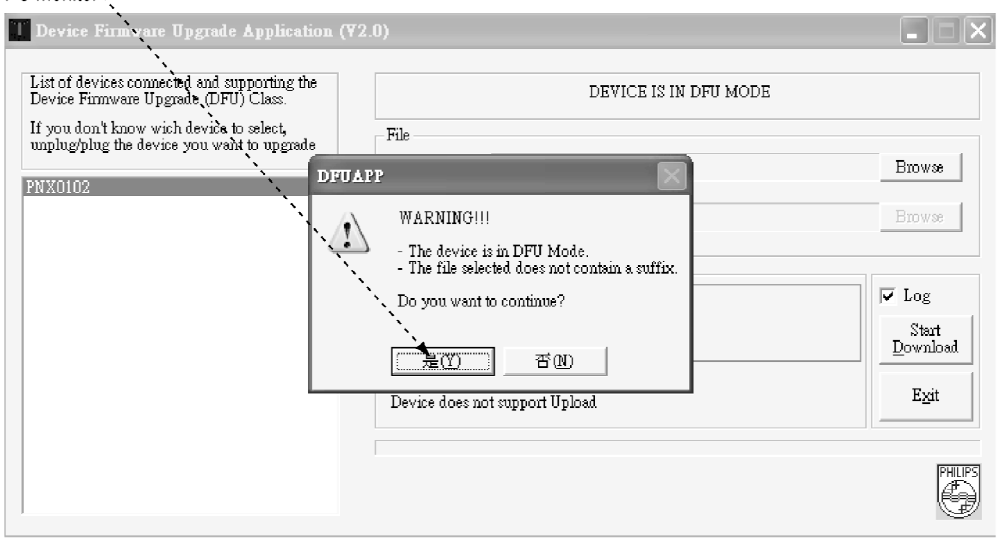
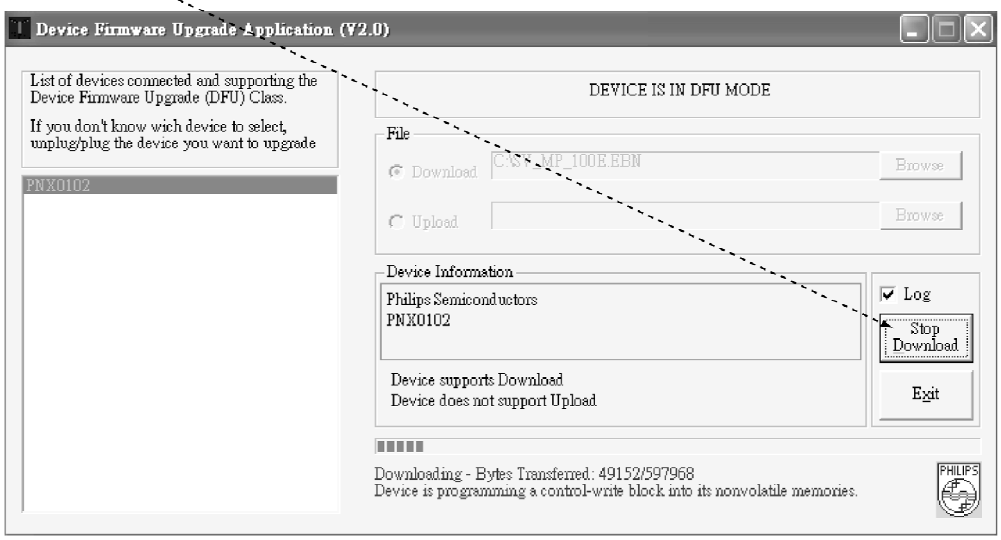
Step 5:
Click [**Yes**] key to continue.

PC Monitor




Step 6:
Click **[ Start Download ]** to Download the "set's system soft".

PC Monitor



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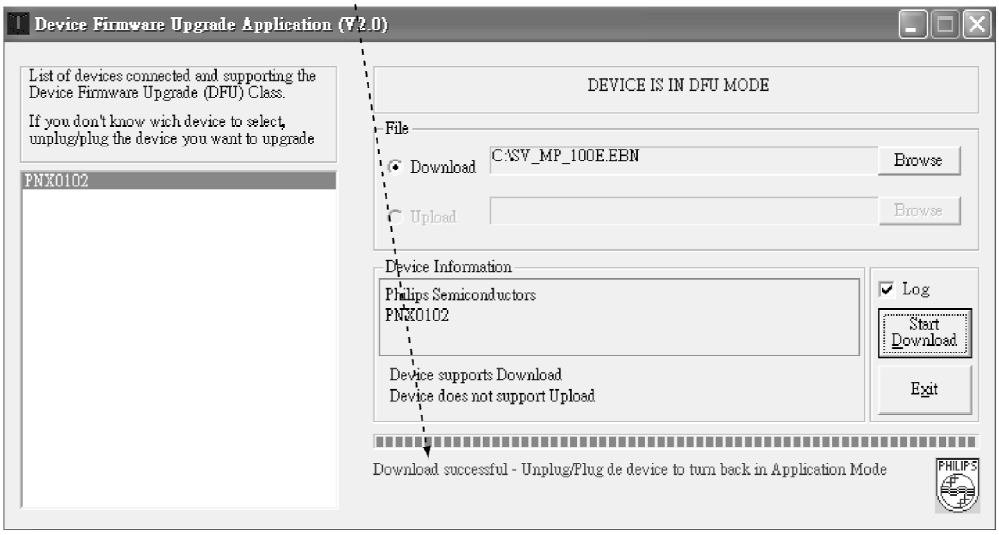
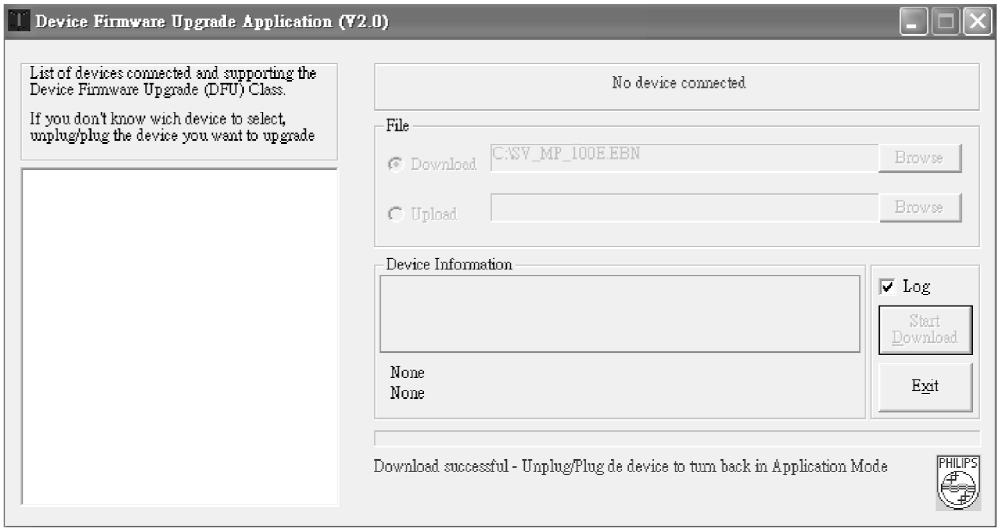
Step 7:
After a few minutes. appear **"Download Sucessful"**.Finally remove the USB cable.

PC Monitor




Step 8:
Remove the jumper wire after checking.

PC Monitor




Step 9:
1.Assemble the set.
2.Turn on the power and connect set to computer with USB cable.
3.Copy the file (SV_MP_100.tbl ) to the set.

| If you don't copy the file (SV_MP100.tab) to set,some of functions can not be operated normally. |
|---|

4.Remove the set safely and then disconnect.

# 8. Troubleshooting

## - What to prepare

## - A PC that has the exclusive application software (Windows Media Player V9.0) installed. Be sure to check for normal operation of the PC. If other application software is installed in the PC, be sure that this software does not affect the operation of the Windows Media Player V9.0.



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**- When a user's product is taken in for service, be sure to obtain not only the player and USB reader/writer. Also, try to obtain as much information as possible on the operational environmentofthe user's PC.**
**<PC's operational environment>**
**Product name, model number, name of CPU, operation clock, RAM capacity, HD capacity, names of installed software, use of USB hub, and any equipment connected with USB simultaneously.**
**- Checkpoints before servicing**
**- Does the battery have enough capacity?**
**Be aware that manganese batteries do not have sufficient capacitor; their use can result in improper operation.**
**- Precautions**
**- A PC sometimes does not recognize the USB reader/writer depending on its conditions (such as competing with the installed software). Therefore, always keep the PC in good condition so that any adaptor can be connected properly.**
**- There is a possibility that not only the hardware but also software (PC's application software) may be the source of the problem. Therefore, be sure to inspect all potential sources carefully and thoroughly before specifying any causes.**

**Remarks:**

**- When the PC does not recognize the USB reader/writer as a removable disc even when the USB reader/writer is connected to the PC, this is an indication of an abnormal USB reader/writer. To confirm this, and to improve the accuracy of your service diagnosis, however, it is recommended that you repeat the check procedure with a new, properly functioning USB reader/writer.**
**- If the PC does not operate normally, it is not possible to check the problem accurately.**
**- Be sure to keep the PC working properly according to its operating requirements.**
**- Windows Media Player (V9.0) (recommended) Free download from: http://www.microsoft.com/downloads/**

# 9. Troubleshooting guide



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**- Before repairing the unit, make the below check.**
**- No operation:**
**- The HOLD function is on.**
**- Replace the battery if it is flat.**
**- No sound or there is a lot of noise:**
**- Ensure the earphone plug is inserted firmly.**
**- Wipe the plug clean with a clean cloth.**
**- Turn up the volume.**
**- Play doesn't resume from the track where I stopped play:**
**- This doesn't work if:**
**You download, record, or delete files, or change the battery.**
**The random play mode is on.**
**- Play doesn't start from the first track:**
**- The random play mode may be on.**
**- Play usually resumes from the track where you last stopped play.**
**Use skip to return to the first track.**
**- The unit stops working:**
**- Take the battery out for about 5 seconds, then reinsert it.**
**- RESET procedure**
**1.Slide the HOLD switch to ON.**
**2.Turn the unit on.**
**3.Press [-MODE] 3 times.**
**4.Press [REC/STOP].**

**All the memories in the unit are deleted.**

**- The display is too dark or too light:**
**- Adjust the contrast.**
**- Play doesn't start immediately:**
**- Depending on the amount of data in the unit, it may take some time for play to start after downloading /recording or changing the battery.**

# 10. Type Illustration of ICs, Transistors and Diodes

# 11. Block Diagram

# 12. Schematic Diagram Notes

**Notes:**

**- Circuit voltage and waveform described herein shall be regarded**



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**as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.**
**This schematic diagram may be modified at any time with the development of new technology.**

| | |
|---|---|
| **S1:** | **PLAY / STOP switch** |
| **S2:** | **FF switch** |
| **S3:** | **REW switch** |
| **S4:** | **Volume up switch (VOL +)** |
| **S5:** | **Volume down switch (VOL -)** |
| **S6:** | **REC switch** |
| **S7:** | **MODE switch** |
| **S8:** | **HOLD switch (HOLD)** |

**- The supply part number is described alone in the replacement parts list.**
**- Voltage from negative terminal of battery.**
**( )...MP3 position, [ ]...FM position.**
**No mark...MP3 AND FM position.**

**- Voltage and signal line / : Positive voltage line / : FM RF signal line / : Audio signal line / : Mp3 signal line / : REC signal line /**

**- Important safety notice:**
**Components identified by ⚠ mark have special characteristics important for safety.**
**Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.**
**When replacing any of components, be sure to use only manufacturers specified parts shown in the parts list.**
**- Caution!**
**IC and LSI are sensitive to static electricity.**
**Secondary trouble can be prevented by taking care during repair.**
**Cover the parts boxes made of plastics with aluminum foil.**
**Ground the soldering iron.**



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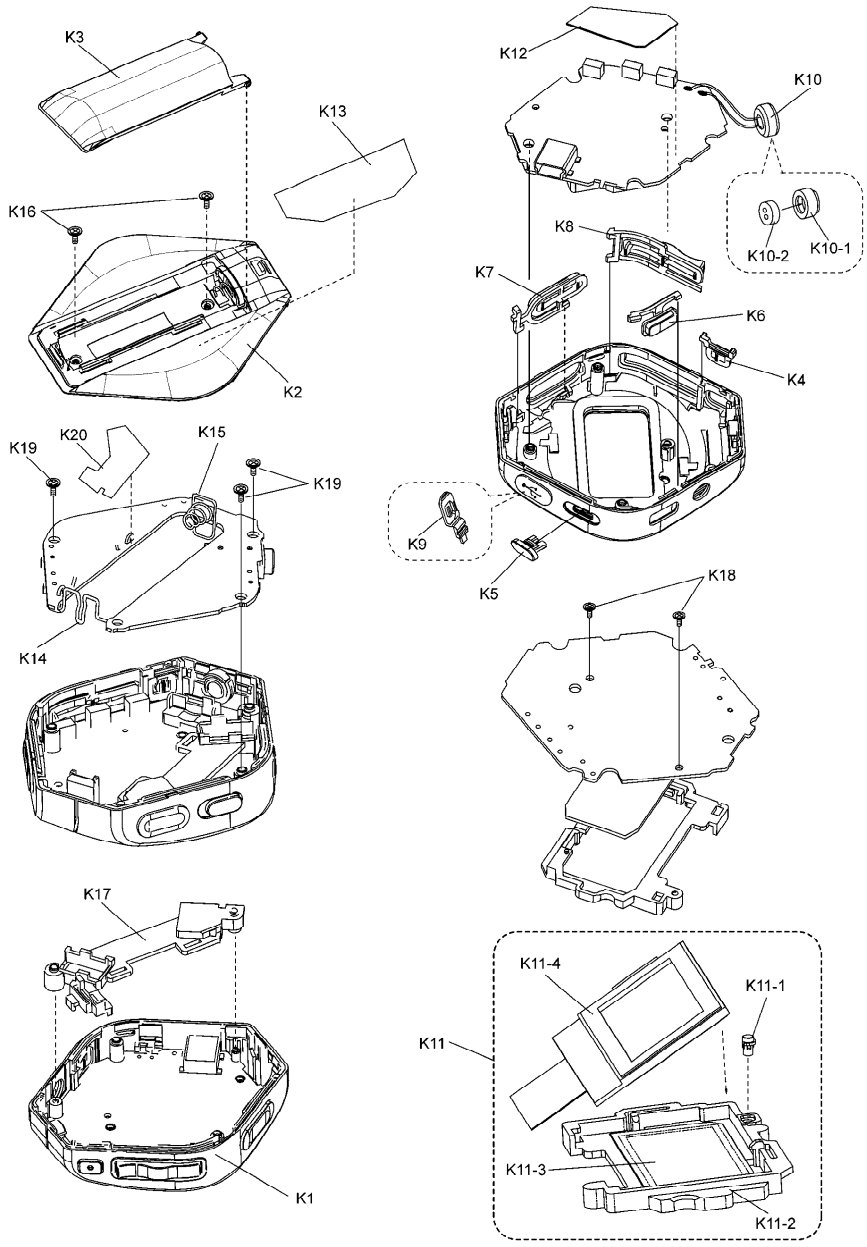
**Put a conductive mat on the work table.**
**Do not touch the legs of IC or LSI with the fingers directly.**

# 13. Schematic Diagram

# 14. Printed Circuit Board Diagram

# 15. Cabinet Parts Location




# 16. Packaging



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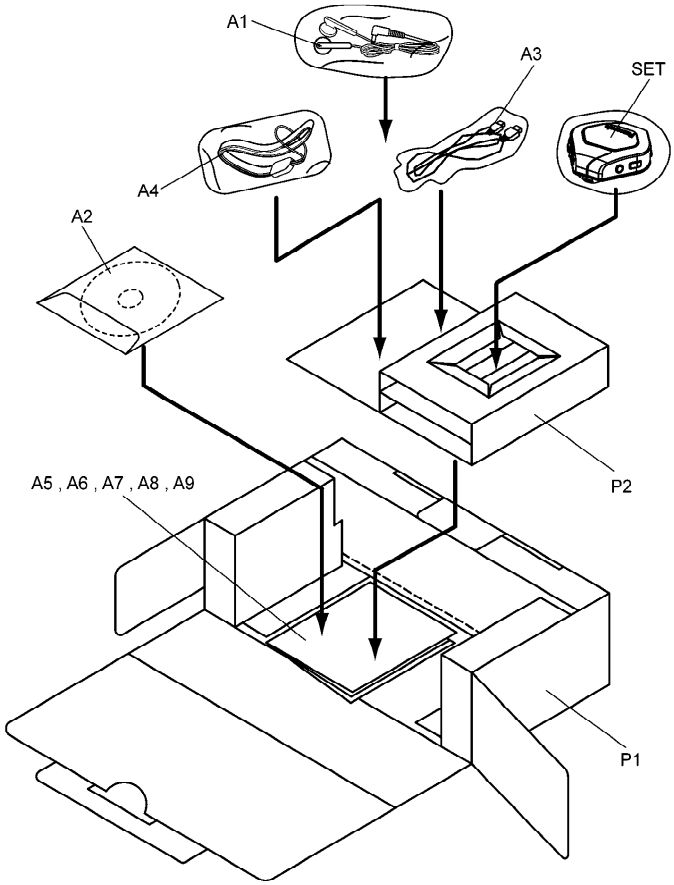


# 17. Replacement Parts List

**Notes:**

**- Important safety notice:**

**Components identified by ⚠ mark have special characteristics important for safety.**
**Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.**
**When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.**

**1. (T) Indicates parts that are supplied TAMACO**

**2. The reference number SA represent the grease tool usea for unit.**

**3. The marking (RTL) indicates that Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of**



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**assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.**

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| CABINET PARTS | | | |
| K1 | RFKKVMP120VK | UP CHASSIS ASSEMBLY | (T) |
| K2 | RKST0103-S | REAR CABINET | (T) |
| K3 | RKKT0059-S | BATTERY COVER | (T) |
| K4 | RGUT0210-K | REC BUTTON | (T) |
| K5 | RGVT0093-S | HOLD KNOB | (T) |
| K6 | RGUT0213-S | MODE BUTTON | (T) |
| K7 | RGUT0212-K | VOL BUTTON | (T) |
| K8 | RGUT0211-S | PLAY BUTTON | (T) |
| K9 | RGQT0051-H | USB COVER | (T) |
| K10 | ZA3MP100V | MIC ASSEMBLY | (T) |
| K10-1 | RMGT0067 | MIC GUM | (T) |
| K10-2 | L0CBZA000001 | MICROPHONE | (T) |
| K11 | ZA2MP100V | LCD ASSEMBLY | (T) |
| K11-1 | RKWT0108-Q | LED PANEL | (T) |
| K11-2 | RMNT0101 | LCD HOLDER | (T) |
| K11-3 | RGCT0011-Q | LGP | (T) |
| K11-4 | L5DCBDB00003 | LCD WITH FPC (30 Pin) | (T) |
| K12 | RMZT0084 | SHIELD SHEET | (T) |
| K13 | RGNT0249 | NAME PLATE | (T) |
| K14 | RJCT40016 | BATTERY TERMINAL TOUCH | (T) |
| K15 | RJCT80013 | BATTERY TERMINAL TOUCH | (T) |
| K16 | RHQT0022-S | SCREW | (T) |
| K17 | RMNT0102 | JACK HOLDER | (T) |
| K18 | RHQT0017-S | SCREW | (T) |
| K19 | XTNR14+45CFZ | PCB SCREW | (T) |
| K20 | RMZT0085 | SHIELD SHEET | (T) |
| ACCESSORIES | | | |
| A1 | L0BAB0000193 | INNERPHONE | (T) |
| A2 | RFET0002 | USB DRIVER DISC PIECE | (T) |
| A3 | K1HA05AD0004 | USB CABLE | (T) |
| A4 | VFC4028 | NACK STRAP | (T) |
| A5 | RQTT0692-1B | INSTRUCTION BOOK | (T) |
| A6 | RQTT0693-1D | INSTRUCTION BOOK | (T) |
| A7 | RQTT0694-1E | INSTRUCTION BOOK | (T) |
| A8 | RQTT0695-1H | INSTRUCTION BOOK | (T) |
| A9 | RQTT0696-1F | INSTRUCTION BOOK | (T) |
| PACKING MATERIALS | | | |
| P1 | RPKT0905 | DECORATION BOX | (T) |
| P2 | RPNT0523 | PAD(FIXTURE) | (T) |
| P.C.B. | | | |
| PCB1 | P1MP120VE | MAIN BOARD | (T) |
| PCB2 | P1MP120VE | TUNER BOARD | (T) |
| PCB3 | RFKZ0286 | TEST BOARD | (T) |
| INTEGRATED CIRCUITS TRANSISTORS AND DIODES | | | |
| IC1 | C1BB00000997 | FM TUNER IC (40 PIN) | (T) |
| IC2 | C3FBVC000001 | 512MB FLASH MEMORY | (T) |
| IC3 | C2HBZG000008 | DSP IC(BGA 180 PIN) | (T) |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| IC6 | C0CBCAC00288 | IC | (T) |
| IC8 | C0CBCAC00288 | IC | (T) |
| IC9 | C0DBAGZ00021 | DC/DC IC(D5P) | (T) |
| IC10 | C0CBCAC00288 | IC | (T) |
| Q10 | B1CFMC000005 | FET | (T) |
| Q11 | B1ABMB000003 | TRANSISTOR | (T) |
| Q12 | B1MBACA00011 | FET ARRAY | (T) |
| D1 | B0CCAA000001 | LOW-VOLTAGE VARIABLE CAP | (T) |
| D2 | B0CCAA000001 | LOW-VOLTAGE VARIABLE CAP | (T) |
| D5 | B0JDDB000002 | DIODE | (T) |
| D10 | LTSTC170CKTP | CHIP L.E.D.(RED) | (T) |
| D11 | MA2Z74800L | DIODE | (T) |
| D12 | B3AFB0000090 | CHIP.LED. | (T) |
| D16 | B0ZBZ0000070 | Varistor C.V.19V | (T) |
| D17 | B0ZBZ0000070 | Varistor C.V.19V | (T) |
| D18 | B0ZBZ0000070 | Varistor C.V.19V | (T) |
| COILS AND TRANSFORMERS | | | |
| L1 | G1CR12JA0037 | CHIP INDUCTOR | (T) |
| L2 | J0JBC0000044 | CHIP COIL | (T) |
| L3 | G1C33NJA0037 | CHIP INDUCTOR | (T) |
| L4 | G1C33NJA0037 | CHIP INDUCTOR | (T) |
| L5 | J0JBC0000044 | CHIP COIL | (T) |
| L6 | J0JBC0000044 | CHIP COIL | (T) |
| L7 | G1A220C00006 | POWER INDUCTOR | (T) |
| L10 | G1A220C00006 | POWER INDUCTOR | (T) |
| L11 | J0JBC0000044 | CHIP COIL | (T) |
| L12 | J0JBC0000044 | CHIP COIL | (T) |
| L13 | J0JBC0000044 | CHIP COIL | (T) |
| L14 | J0JBC0000044 | CHIP COIL | (T) |
| L15 | J0JBC0000044 | CHIP COIL | (T) |
| L16 | J0JBC0000044 | CHIP COIL | (T) |
| L18 | J0JBC0000044 | CHIP COIL | (T) |
| L19 | J0JBC0000044 | CHIP COIL | (T) |
| L20 | J0JBC0000044 | CHIP COIL | (T) |
| L21 | J0JBC0000044 | CHIP COIL | (T) |
| L22 | J0JBC0000044 | CHIP COIL | (T) |
| L23 | J0JBC0000044 | CHIP COIL | (T) |
| L24 | J0JBC0000044 | CHIP COIL | (T) |
| L25 | J0JBC0000044 | CHIP COIL | (T) |
| L37 | G1A220C00006 | POWER INDUCTOR | (T) |
| L39 | BK1608HS102 | FERRITE BEAD | (T) |
| L40 | BK1608HS102 | FERRITE BEAD | (T) |
| L41 | BK1608HS102 | FERRITE BEAD | (T) |
| L42 | J0JGC0000021 | FERRITE BEAD | (T) |
| L44 | BK1608HS102 | FERRITE BEAD | (T) |
| L47 | BK1608HS102 | FERRITE BEAD | (T) |
| L48 | BK1608HS102 | FERRITE BEAD | (T) |
| L49 | BK1608HS102 | FERRITE BEAD | (T) |
| L50 | J0JCC0000077 | CHIP COIL | (T) |
| L51 | J0JCC0000077 | CHIP COIL | (T) |
| L52 | J0JCC0000077 | CHIP COIL | (T) |
| L53 | J0JBC0000044 | CHIP COIL | (T) |
| L57 | J0JBC0000044 | CHIP COIL | (T) |
| L58 | J0JGC0000021 | FERRITE BEAD | (T) |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L59 | J0JBC0000044 | CHIP COIL | (T) |
| L60 | J0JBC0000044 | CHIP COIL | (T) |
| L62 | BK1608HS102 | FERRITE BEAD | (T) |
| L64 | BK1608HS102 | FERRITE BEAD | (T) |
| L65 | BK1608HS102 | FERRITE BEAD | (T) |
| L69 | J0JGC0000021 | FERRITE BEAD | (T) |
| L91 | J0JGC0000021 | FERRITE BEAD | (T) |
| L92 | BK1608HS102 | FERRITE BEAD | (T) |
| L93 | RLL300040-Y | CHOCK COIL | (T) |
| SWITCHES | | | |
| SW1 | K0H1BB000068 | SWITCH | (T) |
| SW2 | K0H1BB000068 | SWITCH | (T) |
| SW3 | K0H1BB000068 | SWITCH | (T) |
| SW4 | K0H1BB000068 | SWITCH | (T) |
| SW5 | K0H1BB000068 | SWITCH | (T) |
| SW6 | K0H1BB000068 | SWITCH | (T) |
| SW7 | K0H1BB000068 | SWITCH | (T) |
| SW8 | K0D112B00071 | SLIDE SWITCH | (T) |
| IC PROCTECTOR | | | |
| ICP1 | D0GBR00JA008 | CHIP RESISTOR | (T) |
| JACK | | | |
| JK1 | K2HC103E0026 | M3.5 JACK GARY | (T) |
| CRYSTAL | | | |
| X1 | H0J480500015 | CRYSTAL(13MHZ) | (T) |
| X2 | H0J120500034 | CRYSTAL 12MHz | (T) |
| SOCKET | | | |
| CN1 | K1KB24A00045 | 24 PIN CONNECTOR (HEADER) | (T) |
| CN2 | K1KB24A00044 | 24 PIN CONNECTOR (SOCKET) | (T) |
| CN3 | K1FB105E0004 | USB SOCKET | (T) |
| CN4 | K1MN30B00124 | LCD FPC CONNECTOR (30 PIN | (T) |
| RESISTORS | | | |
| R1 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| R2 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| R3 | D0GA100JA020 | CHIP RESISTOR | (T) |
| R4 | D0GA183JA020 | CHIP RESISTOR | (T) |
| R5 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| R6 | D0GA104JA020 | CHIP RESISTOR | (T) |
| R7 | D0GA103JA020 | CHIP RESISTOR | (T) |
| R8 | D1H42202A014 | CHIP RESISTOR | (T) |
| R11 | D0GA332JA020 | CHIP RESISTOR | (T) |
| R12 | D0GA472JA020 | CHIP RESISTOR | (T) |
| R13 | D0GA682JA020 | CHIP RESISTOR | (T) |
| R14 | D0GA103JA020 | CHIP RESISTOR | (T) |
| R15 | D0GA223JA020 | CHIP RESISTOR | (T) |
| R16 | D0GA683JA020 | CHIP RESISTOR | (T) |
| R18 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| R19 | D0GA105JA020 | CHIP RESISTOR | (T) |
| R22 | D0GA333JA020 | CHIP RESISTOR | (T) |
| R27 | D1H41042A014 | CHIP RESISTOR | (T) |
| R29 | D0GA105JA020 | CHIP RESISTOR | (T) |
| R30 | D0GA183JA020 | CHIP RESISTOR | (T) |
| R31 | D1H41032A014 | CHIP RESISTOR | (T) |
| R32 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| R34 | D0GA104JA020 | CHIP RESISTOR | (T) |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R36 | D0GA102JA020 | CHIP RESISTOR | (T) |
| R38 | D0GA105JA020 | CHIP RESISTOR | (T) |
| R39 | D1H41042A014 | CHIP RESISTOR | (T) |
| R40 | D0GA103JA020 | CHIP RESISTOR | (T) |
| R41 | D0GA104JA020 | CHIP RESISTOR | (T) |
| R43 | D0GA104JA020 | CHIP RESISTOR | (T) |
| R51 | D0GA100JA020 | CHIP RESISTOR | (T) |
| R53 | D0GA100JA020 | CHIP RESISTOR | (T) |
| R54 | D0GA151JA020 | CHIP RESISTOR | (T) |
| R55 | D0GA472JA020 | CHIP RESISTOR | (T) |
| R57 | D0GA102JA020 | CHIP RESISTOR | (T) |
| R58 | D0GA222JA020 | CHIP RESISTOR | (T) |
| R62 | D0GA152JA020 | CHIP RESISTOR | (T) |
| R65 | D0GA334JA020 | CHIP RESISTOR | (T) |
| R66 | D0GA472JA020 | CHIP RESISTOR | (T) |
| R68 | D0GA104JA020 | CHIP RESISTOR | (T) |
| R74 | D0GA150JA020 | CHIP RESISTOR | (T) |
| R76 | D0GA102JA020 | CHIP RESISTOR | (T) |
| R78 | D0GA272JA020 | CHIP RESISTOR | (T) |
| R83 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| R89 | D0GA152JA020 | CHIP RESISTOR | (T) |
| R90 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| R92 | D0GA332JA020 | CHIP RESISTOR | (T) |
| R101 | D0GA184JA020 | CHIP RESISTOR | (T) |
| R102 | D0GA152JA020 | CHIP RESISTOR | (T) |
| R103 | D0GA123JA020 | CHIP RESISTOR | (T) |
| R104 | D0GA103JA020 | CHIP RESISTOR | (T) |
| R105 | D0GA334JA020 | CHIP RESISTOR | (T) |
| R106 | D0GA103JA020 | CHIP RESISTOR | (T) |
| R108 | D0GA330JA020 | CHIP RESISTOR | (T) |
| R109 | D0GA330JA020 | CHIP RESISTOR | (T) |
| CHIP JUMPERS | | | |
| J1 | D0GBR00JA008 | CHIP RESISTOR | (T) |
| J2 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| J3 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| J4 | D0GBR00JA008 | CHIP RESISTOR | (T) |
| J5 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| J6 | D0GAR00JA020 | CHIP RESISTOR | (T) |
| CAPACITORS | | | |
| C1 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C2 | F3E0G2260001 | TANTALUM CAP. | (T) |
| C3 | F1G1C103A004 | CHIP CAPACITOR | (T) |
| C4 | F1G1E472A056 | CHIP CAPACITOR | (T) |
| C5 | F1G1C223A004 | CHIP CAPACITOR | (T) |
| C6 | ECUE1H270JCQ | CHIP CAPACITOR | (T) |
| C7 | F1G1H470A451 | CHIP CAPACITOR | (T) |
| C8 | ECUENA473KBQ | CHIP CAPACITOR | (T) |
| C9 | ECUVNA105ZFV | CHIP CAPACITOR | (T) |
| C10 | ECUENA473KBQ | CHIP CAPACITOR | (T) |
| C11 | ECUENA473KBQ | CHIP CAPACITOR | (T) |
| C12 | ECUENA473KBQ | CHIP CAPACITOR | (T) |
| C13 | ECUENC333KBQ | CHIP CAPACITOR | (T) |
| C14 | F1G1C223A004 | CHIP CAPACITOR | (T) |
| C15 | F1G1C223A004 | CHIP CAPACITOR | (T) |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C16 | ECUVNA105ZFV | CHIP CAPACITOR | (T) |
| C17 | ECUENC333KBQ | CHIP CAPACITOR | (T) |
| C18 | ECUE0J224KBQ | CHIP CAPACITOR | (T) |
| C19 | ECUE0J224KBQ | CHIP CAPACITOR | (T) |
| C20 | F3G0G1070001 | TANTALUM CAP. | (T) |
| C21 | ECUE1H100DCQ | CHIP CAPACITOR | (T) |
| C22 | F1G1C223A004 | CHIP CAPACITOR | (T) |
| C23 | ECUE1H102KBQ | CHIP CAPACITOR | (T) |
| C24 | F1G1C223A004 | CHIP CAPACITOR | (T) |
| C25 | F3E0G2260001 | TANTALUM CAP. | (T) |
| C26 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C27 | F3G0G2270001 | TANTALUM CAP. | (T) |
| C28 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C29 | F3E0G2260001 | TANTALUM CAP. | (T) |
| C31 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C32 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C33 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C35 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C36 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C37 | F1G1H180A451 | CHIP CAPACITOR | (T) |
| C38 | ECST0JZ106R | TANTALUM CAP. | (T) |
| C39 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C40 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C41 | F1G1H180A451 | CHIP CAPACITOR | (T) |
| C42 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C43 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C44 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C45 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C46 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C49 | F3G0G2270001 | TANTALUM CAP. | (T) |
| C50 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C51 | RCST0GY686RU | TANTALUM CAP. | (T) |
| C52 | F3G0G2270001 | TANTALUM CAP. | (T) |
| C53 | F3G0G2270001 | TANTALUM CAP. | (T) |
| C55 | F3E0G2260001 | TANTALUM CAP. | (T) |
| C57 | ECUVNA105ZFV | CHIP CAPACITOR | (T) |
| C58 | ECUVNA105ZFV | CHIP CAPACITOR | (T) |
| C59 | ECUVNA105ZFV | CHIP CAPACITOR | (T) |
| C60 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C61 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C62 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C63 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C64 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C67 | ECUE1H181KBQ | CHIP CAPACITOR | (T) |
| C68 | ECUE1H391KBQ | CHIP CAPACITOR | (T) |
| C70 | F3G0G1070001 | TANTALUM CAP. | (T) |
| C72 | ECUENA473KBQ | CHIP CAPACITOR | (T) |
| C73 | ECUE1H101KBQ | CHIP CAPACITOR | (T) |
| C80 | ECUE0J224KBQ | CHIP CAPACITOR | (T) |
| C82 | ECUE0J224KBQ | CHIP CAPACITOR | (T) |
| C86 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C87 | ECUE1H060DCQ | CHIP CAPACITOR | (T) |
| C88 | ECUE1H060DCQ | CHIP CAPACITOR | (T) |
| C90 | ECUVNA105ZFV | CHIP CAPACITOR | (T) |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C91 | F1G1C103A004 | CHIP CAPACITOR | (T) |
| C92 | F3G0G1070001 | TANTALUM CAP. | (T) |
| C93 | F3G0G2270001 | TANTALUM CAP. | (T) |
| C96 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C98 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C100 | ECUE1H391KBQ | CHIP CAPACITOR | (T) |
| C101 | ECUE1H331KBQ | CHIP CAPACITOR | (T) |
| C103 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C104 | PSLB30G107M | TANTALUM CAP. | (T) |
| C105 | ECUE1H101KBQ | CHIP CAPACITOR | (T) |
| C106 | ECUE0J224KBQ | CHIP CAPACITOR | (T) |
| C107 | F3G0G1070001 | TANTALUM CAP. | (T) |
| C109 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C111 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C112 | ECST0JZ106R | TANTALUM CAP. | (T) |
| C113 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C115 | ECST0JZ106R | TANTALUM CAP. | (T) |
| C116 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C118 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C119 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C120 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C124 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C125 | F3G0G2270001 | CHIP CAPACITOR | (T) |
| C126 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C127 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C128 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C130 | K105BJ104KVC | CHIP CAPACITOR | (T) |
| C131 | K105BJ104KVC | CHIP CAPACITOR | (T) |

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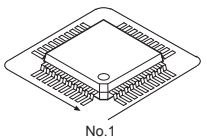


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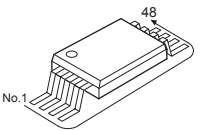


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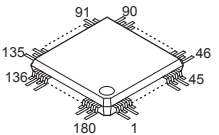


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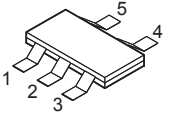
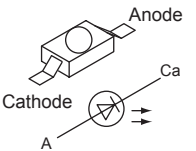



LTSTC170CKTP

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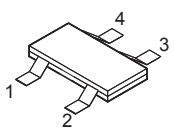


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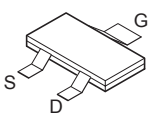


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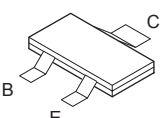
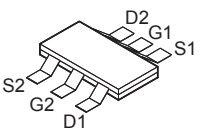



MCH6616

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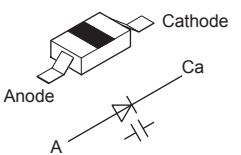


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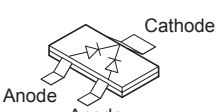


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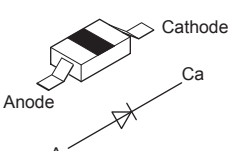


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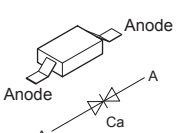
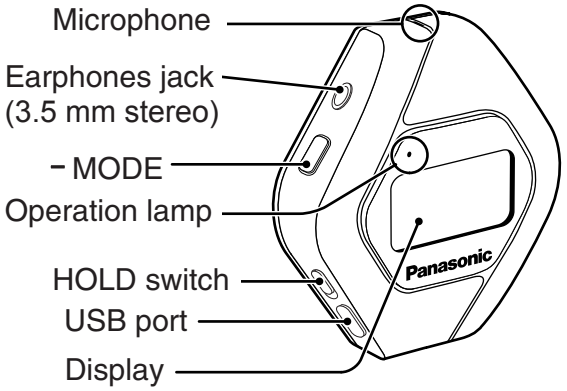
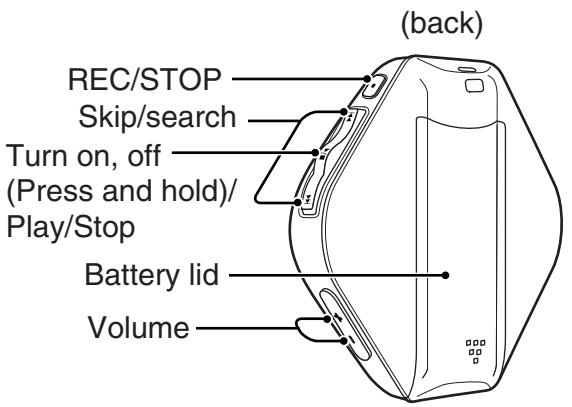
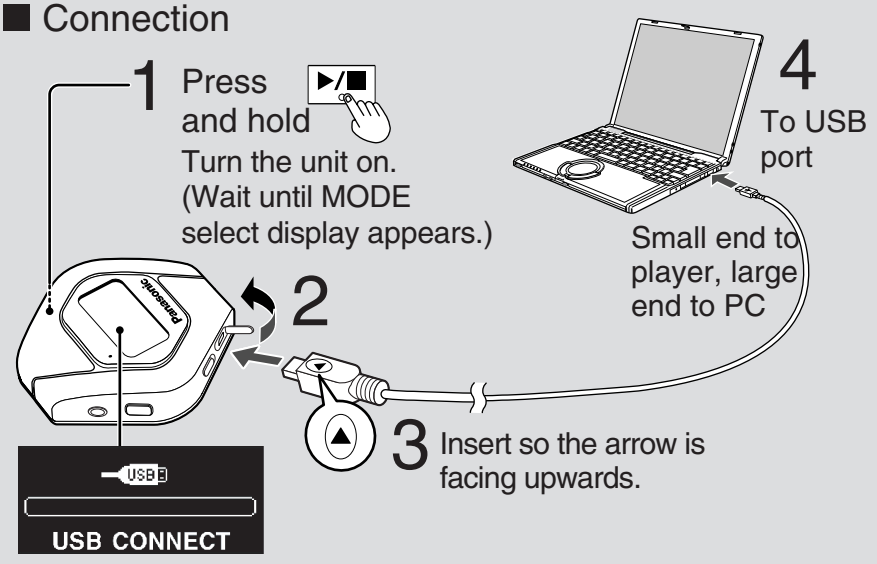


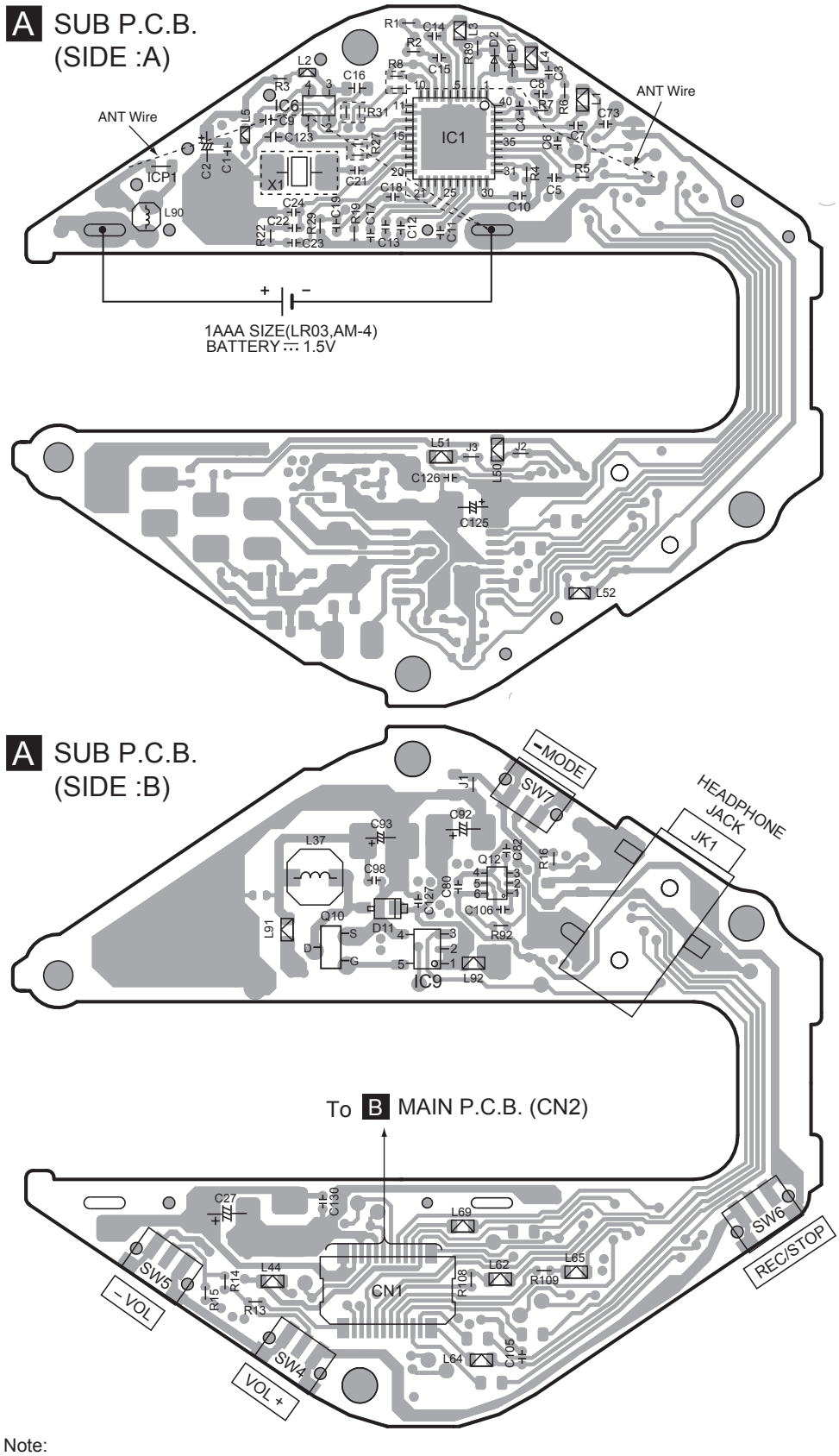



# Connecting to a computer and downloading files

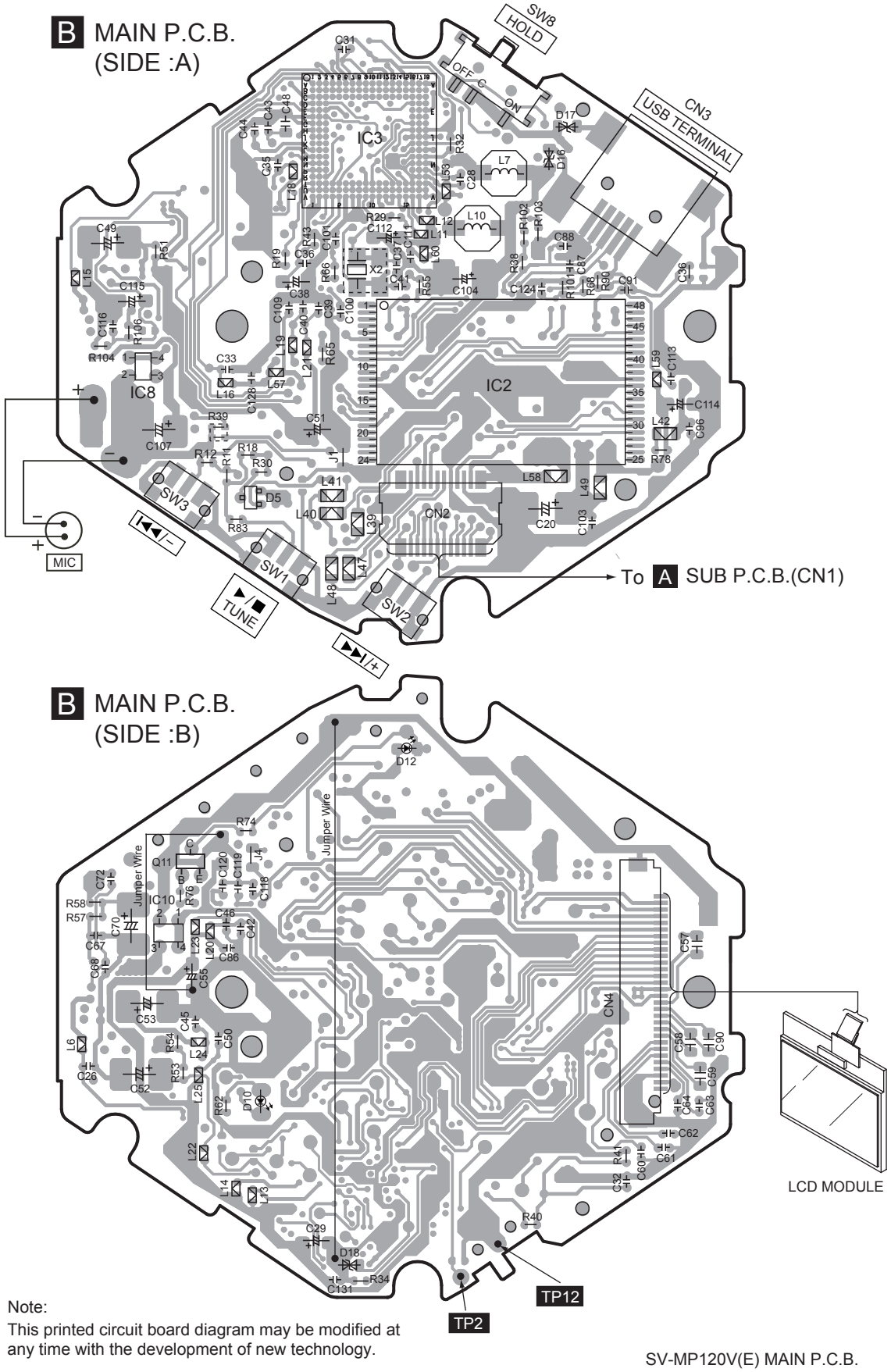
## ■ Connection






Note:
This printed circuit board diagram may be modified at any time with the development of new technology.

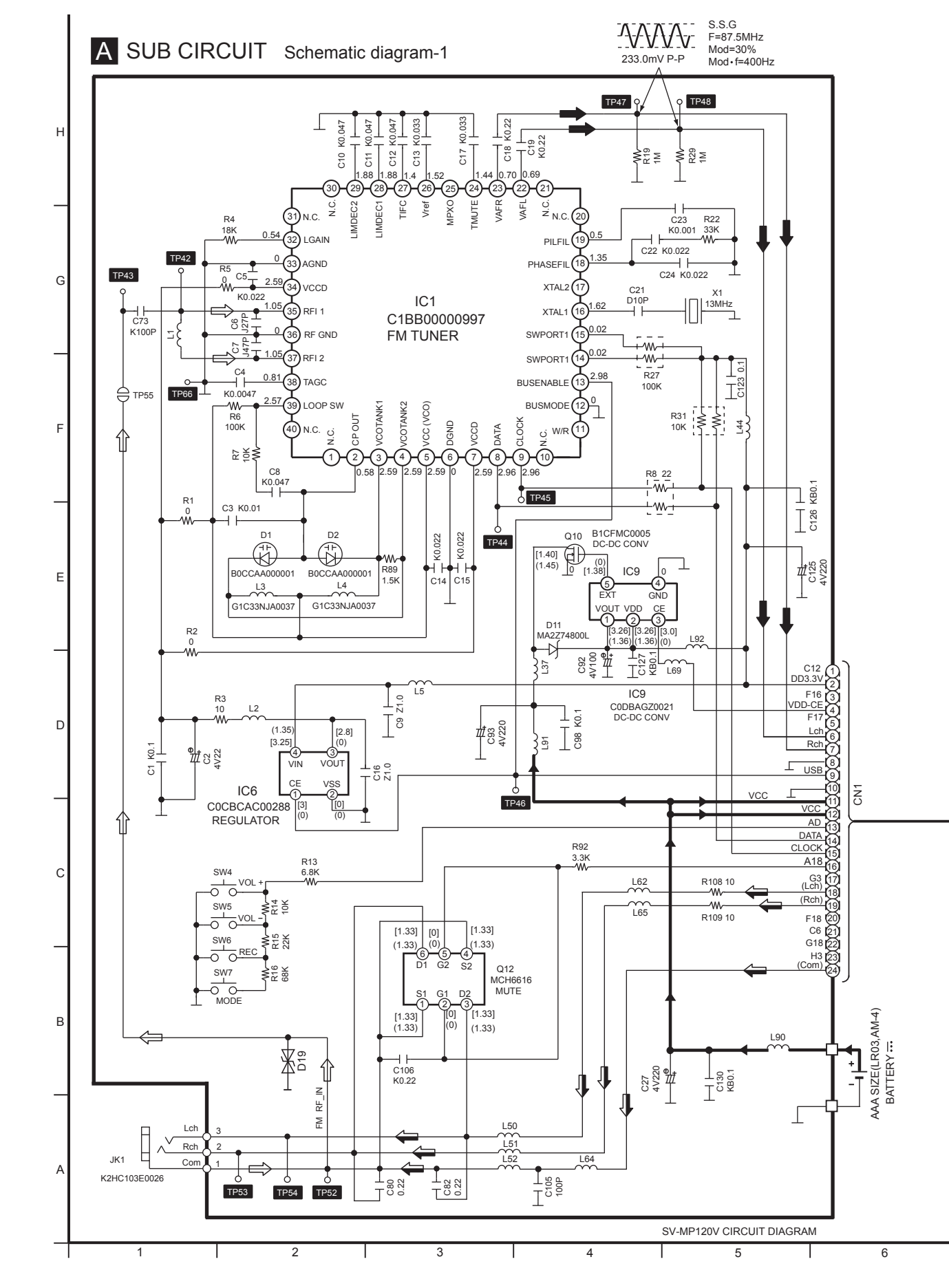
SV-MP120V(E) MAIN P.C.B.



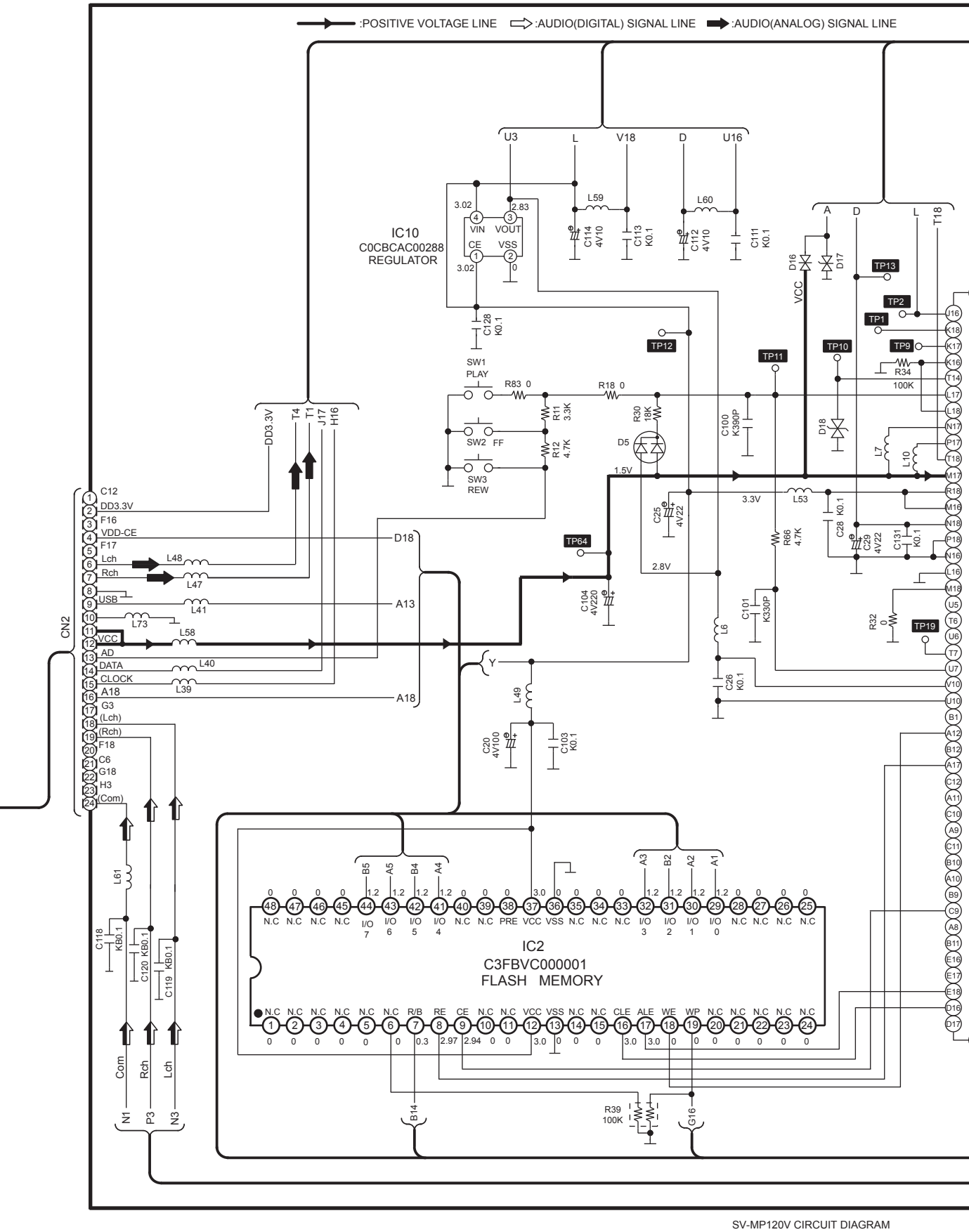

Note:
This printed circuit board diagram may be modified at any time with the development of new technology.

SV-MP120V(E) MAIN P.C.B.

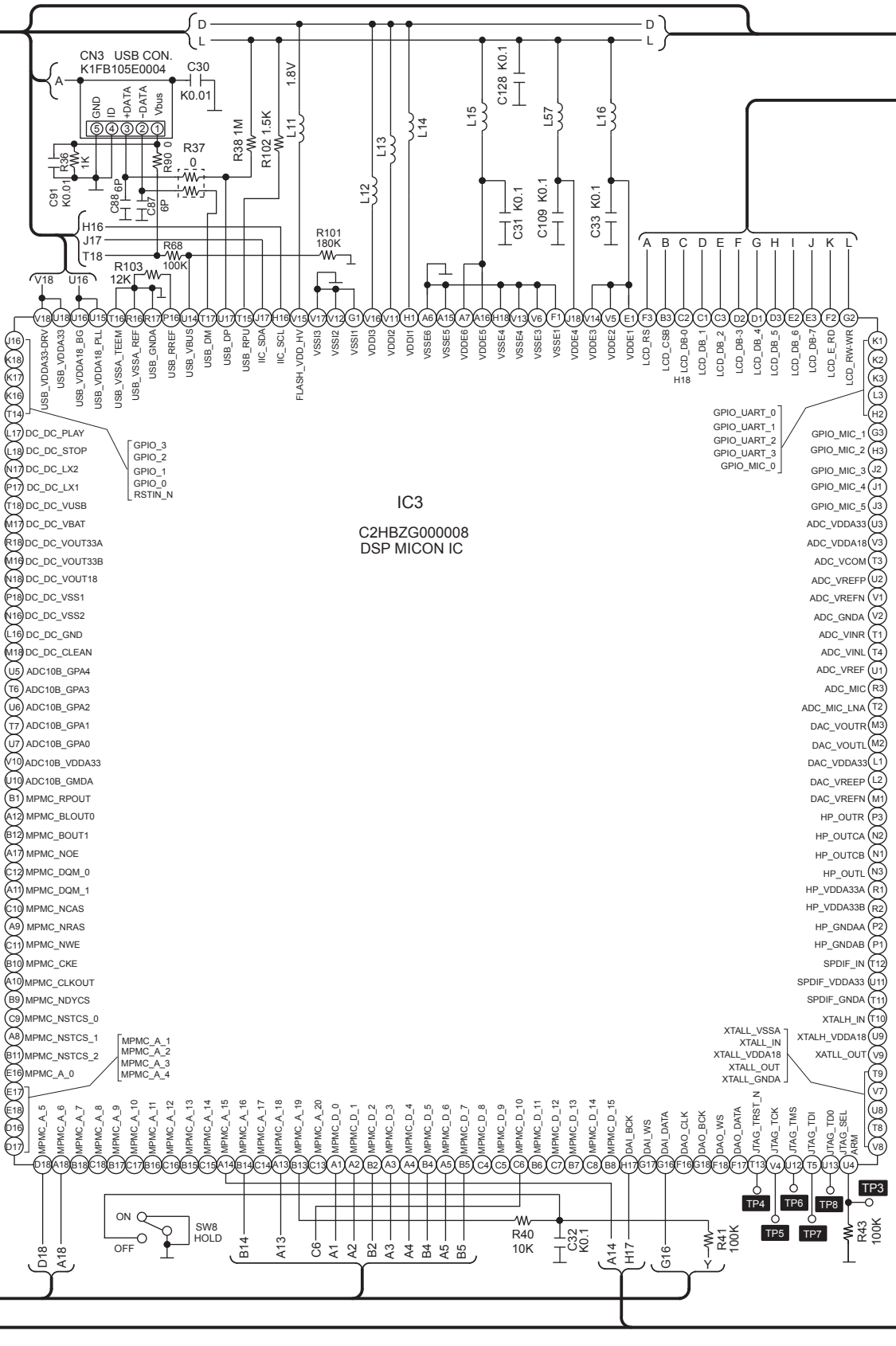
# A SUB CIRCUIT Schematic diagram-1



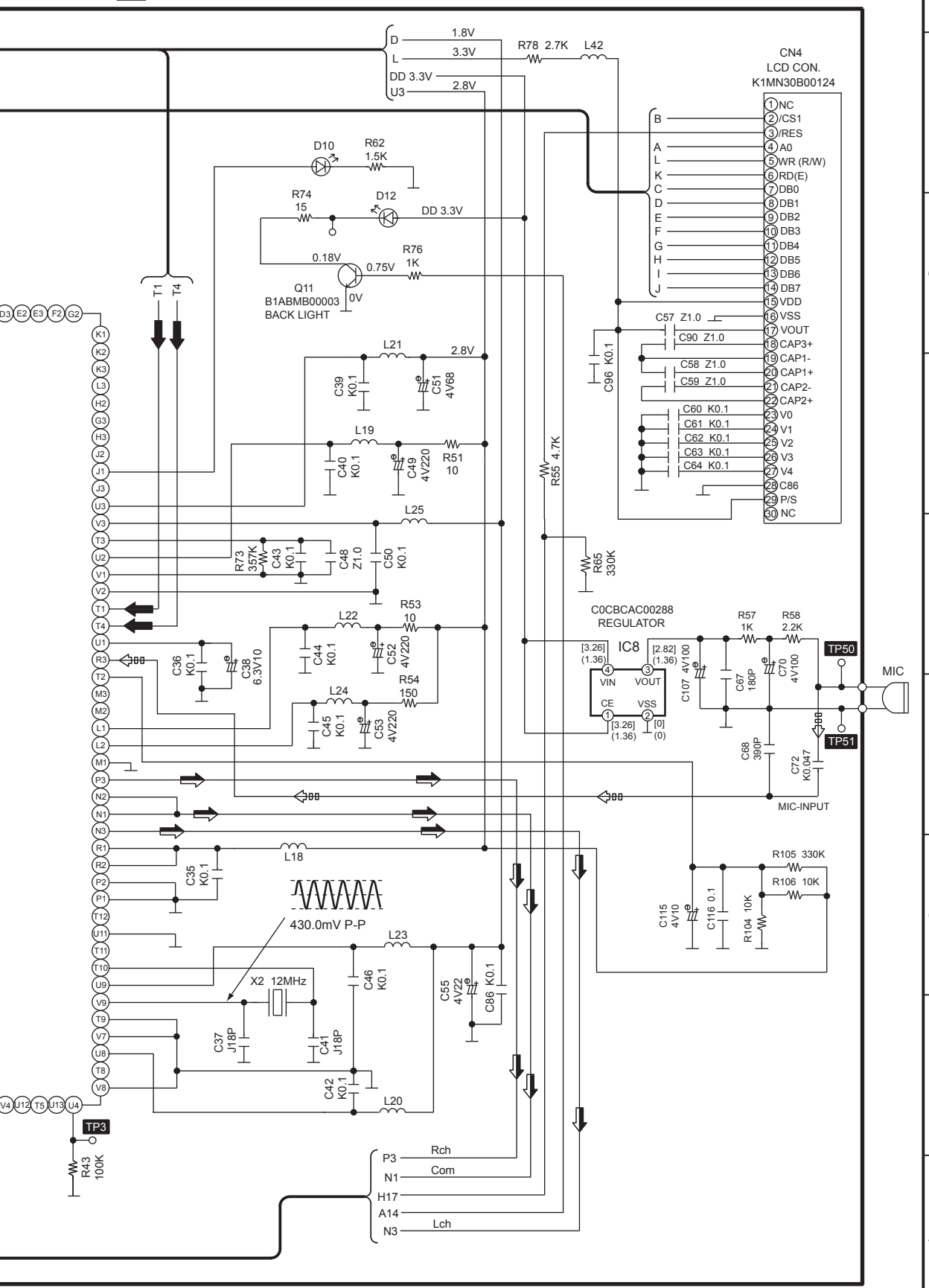
# B MAIN CIRCUIT Schematic diagram-2




SV-MP120V CIRCUIT DIAGRAM

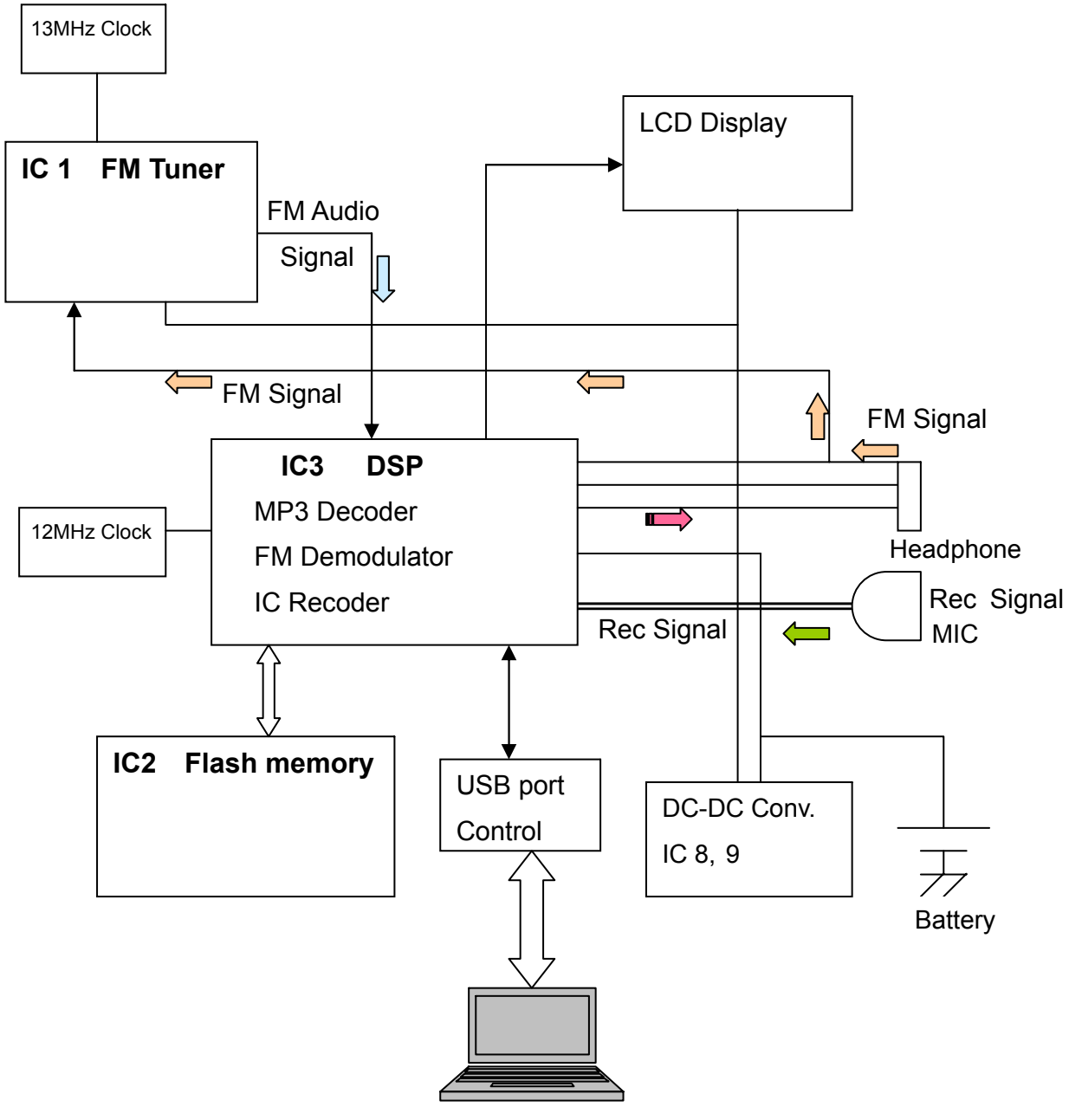

IC3
C2HBZG000008
DSP MICON IC
CN3 USB CON.
K1FB105E0004
GND
ID
+DATA
-DATA
Vbus
C30
K0.01
R36 1K
R90 0
R37 0
R38 1M
R102 1.5K
L11
1.8V
L12
L13
L14
L15
L57
L16
C128 K0.1
C31 K0.1
C109 K0.1
C33 K0.1
C91 K0.01
C88 6P
C87 6P
R68 100K
R103 12K
R101 180K
H16
J17
T18
V18
U16
GPIO_3
GPIO_2
GPIO_1
GPIO_0
RSTIN_N
GPIO_UART_0
GPIO_UART_1
GPIO_UART_2
GPIO_UART_3
GPIO_MIC_0
MPMC_A_1
MPMC_A_2
MPMC_A_3
MPMC_A_4
XTALL_VSSA
XTALL_IN
XTALL_VDDA18
XTALL_OUT
XTALL_GNDA
ON
OFF
SW8
HOLD
R40 10K
C32 K0.1
R41 100K
R43 100K
TP3
TP4
TP5
TP6
TP7
TP8

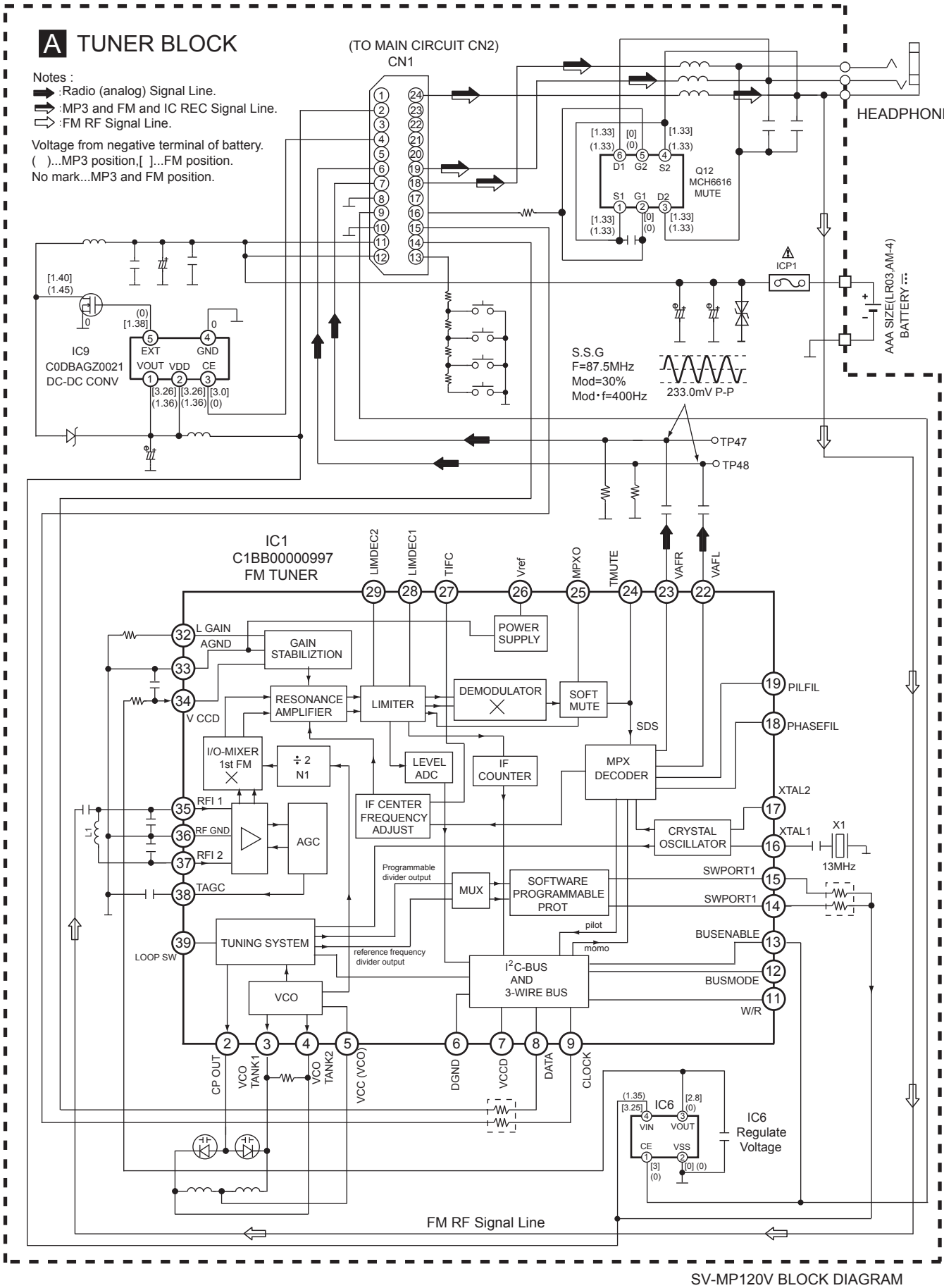
# B MAIN CIRCUIT Schematic diagram-4




SV-MP120V CIRCUIT DIAGRAM

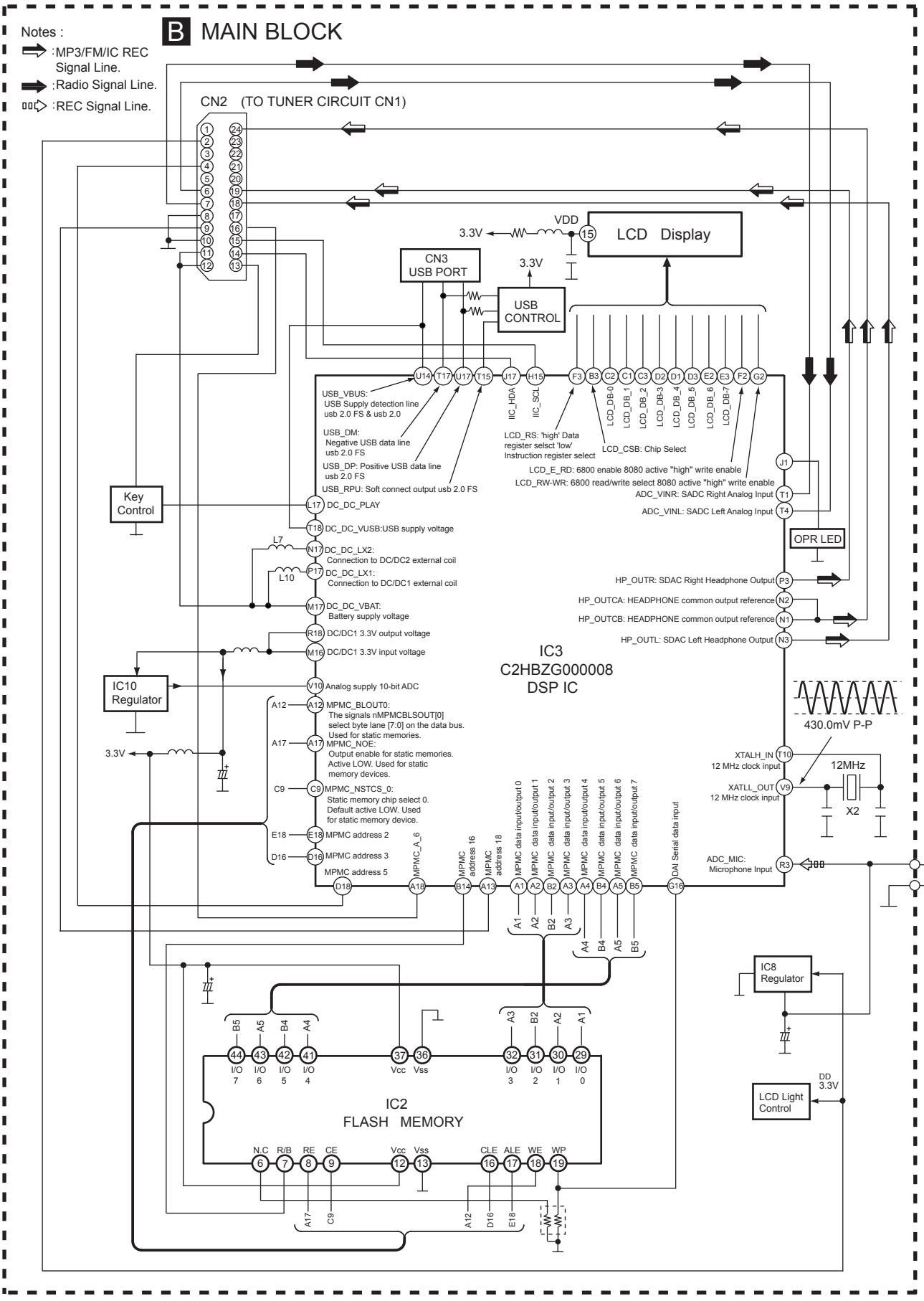
# Overall Block Diagram

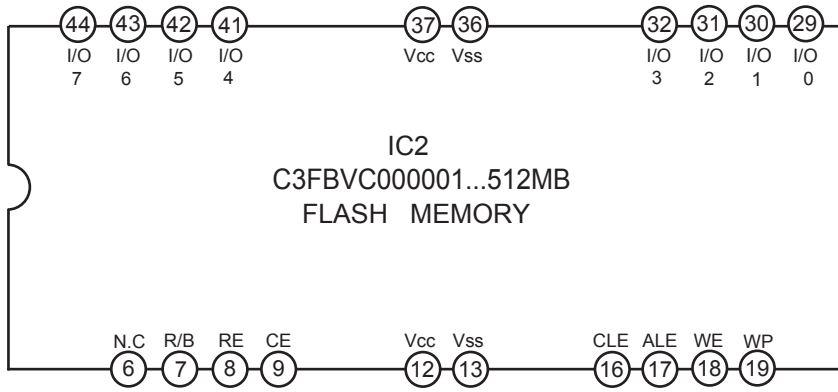



A TUNER BLOCK
(TO MAIN CIRCUIT CN2)
CN1
Notes :
:Radio (analog) Signal Line.
:MP3 and FM and IC REC Signal Line.
:FM RF Signal Line.
Voltage from negative terminal of battery.
( )...MP3 position,[ ]...FM position.
No mark...MP3 and FM position.
HEADPHONE
Q12
MCH6616
MUTE
ICP1
AAA SIZE(LR03,AM-4)
BATTERY
IC9
C0DBAGZ0021
DC-DC CONV
S.S.G
F=87.5MHz
Mod=30%
Mod・f=400Hz
233.0mV P-P
TP47
TP48
IC1
C1BB00000997
FM TUNER
LIMDEC2
LIMDEC1
TIFC
Vref
MPXO
TMUTE
VAFR
VAFL
L GAIN
AGND
V CCD
POWER SUPPLY
GAIN STABILIZTION
RESONANCE AMPLIFIER
LIMITER
DEMODULATOR
SOFT MUTE
SDS
PILFIL
PHASEFIL
I/O-MIXER 1st FM
÷ 2 N1
LEVEL ADC
IF COUNTER
MPX DECODER
XTAL2
RFI 1
RF GND
RFI 2
TAGC
AGC
IF CENTER FREQUENCY ADJUST
CRYSTAL OSCILLATOR
XTAL1
X1
13MHz
Programmable divider output
MUX
SOFTWARE PROGRAMMABLE PROT
SWPORT1
SWPORT1
pilot
momo
BUSENABLE
TUNING SYSTEM
LOOP SW
reference frequency divider output
I2C-BUS AND 3-WIRE BUS
BUSMODE
W/R
VCO
CP OUT
VCO TANK1
VCO TANK2
VCC (VCO)
DGND
VCCD
DATA
CLOCK
IC6
IC6 Regulate Voltage
FM RF Signal Line

# B MAIN BLOCK

Notes :
- :MP3/FM/IC REC Signal Line.
- :Radio Signal Line.
- :REC Signal Line.


CN2 (TO TUNER CIRCUIT CN1)
CN3 USB PORT
USB CONTROL
3.3V
VDD
LCD Display
USB_VBUS: USB Supply detection line usb 2.0 FS & usb 2.0
USB_DM: Negative USB data line usb 2.0 FS
USB_DP: Positive USB data line usb 2.0 FS
USB_RPU: Soft connect output usb 2.0 FS
IIC_HDA
IIC_SCL
LCD_RS: 'high' Data register selsct 'low' Instruction register select
LCD_CSB: Chip Select
LCD_E_RD: 6800 enable 8080 active "high" write enable
LCD_RW-WR: 6800 read/write select 8080 active "high" write enable
Key Control
DC_DC_PLAY
DC_DC_VUSB:USB supply voltage
DC_DC_LX2: Connection to DC/DC2 external coil
DC_DC_LX1: Connection to DC/DC1 external coil
DC_DC_VBAT: Battery supply voltage
DC/DC1 3.3V output voltage
DC/DC1 3.3V input voltage
IC10 Regulator
Analog supply 10-bit ADC
MPMC_BLOUT0: The signals nMPMCBLSOUT[0] select byte lane [7:0] on the data bus. Used for static memories.
MPMC_NOE: Output enable for static memories. Active LOW. Used for static memory devices.
MPMC_NSTCS_0: Static memory chip select 0. Default active LOW. Used for static memory device.
MPMC address 2
MPMC address 3
MPMC address 5
IC3
C2HBZG000008
DSP IC
ADC_VINR: SADC Right Analog Input
ADC_VINL: SADC Left Analog Input
OPR LED
HP_OUTR: SDAC Right Headphone Output
HP_OUTCA: HEADPHONE common output reference
HP_OUTCB: HEADPHONE common output reference
HP_OUTL: SDAC Left Headphone Output
430.0mV P-P
XTALH_IN 12 MHz clock input
XATLL_OUT 12 MHz clock input
12MHz
X2
ADC_MIC: Microphone Input
MIC
IC8 Regulator
LCD Light Control
IC2
FLASH MEMORY




## PIN DESCRIPTION

I/O 0 ~ I/O7: DATA INPUTS/OUTPUTS

The I/O pins are used to input command,address and data, and to output data during read operations.

The I/O pins float to high-z when the chip is deselected or when the outputs are disabled.

Vcc: POWER Vcc is the power supply for device.

Vss: GROUND

R/B: READY/BUSY OUTPUT

The R/B output indicates the status of the device operation.When low, it indicates that a program, erase or random read operation is in process and returns to high state upon completion.It is an open drain output and does not float to high-z condition when the chip is deselected or when outputs are disabled.

RE: READ ENABLE

The RE input is the serial data-out control, and when active drives the data onto the I/O bus. Data is valid tREA after the falling edge of RE which also increments the internal column address counter by one.

CE: CHIP ENABLE

The CE input is the device selection control. When the device is in the Busy state, CE high is ignored, and the device does not return to standby mode in program or erase opertion. Regarding CE control during read operation, refer to "Page read" section of Device operation.

CLE: COMMAND LATCH ENABLE

The CLE input controls the activating path for commands sent to the command register. When active high, commands are latched into the command register through the I/O ports on the rising edge of the WE signal.

ALE: ADDRESS LATCH ENABLE

The ALE input controls the activating path for address to the internal address registers.Addresses are latched on the rising edge of WE with ALE high.

WE: WRITE ENABLE

The WE input controls writes to the I/O port. Commands, address and data are latched on the rising edge of the WE pulse.

WP: WRITE PROTECT

The WP pin provides inadvertent write/erase protection during power transitions. The internal high voltage generator is reset when the WP pin is active low.

**BLOCK DIAGRAM**